# Level-3/DAQ Simulation Status Update

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4-25-97
General Upgrade
Trigger Meeting

- Progress
- Plans

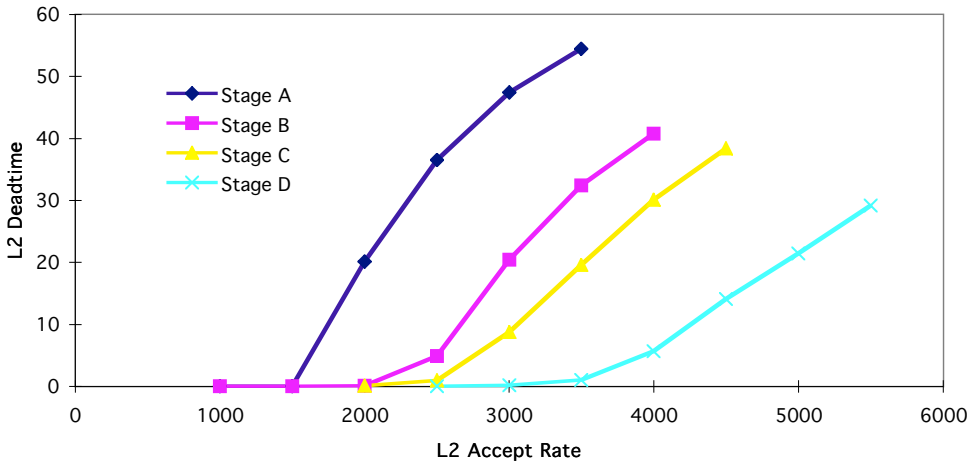
You can find all of this talk on WWW:

http://d0sgi0.fnal.gov/gwatts/talks/

# Stage C and D

- Looked at Stage C and D.

| | A | B | C | D |
|---|---|---|---|---|
| Collectors | 8 | 8 | 8 | 12 |
| MCH Segments | 16 | 16 | 16 | 24 |
| L3 Segments | 2 | 3 | 4 | 4 |
| DC per Segment | 4 | 4 | 4 | 6 |
| L3 Nodes | 48 | 48 | 64 | 64 |
| 50% Trigger Rate (kHz) | 0.8 | 1.2 | 1.6 | 2.4 |



# Mike Fortner's Crate List

- List is about a year old.
- 57 Crates
- 8 Collectors
- 162 kB/event, instead of 250 kB/event
  - Continue to use a 250 kB list for simulations.
- Crate size widths:
  - SVX Crates: 20% (JW)
  - Other Crates: 40%
  - Widths are not correlated by detector.

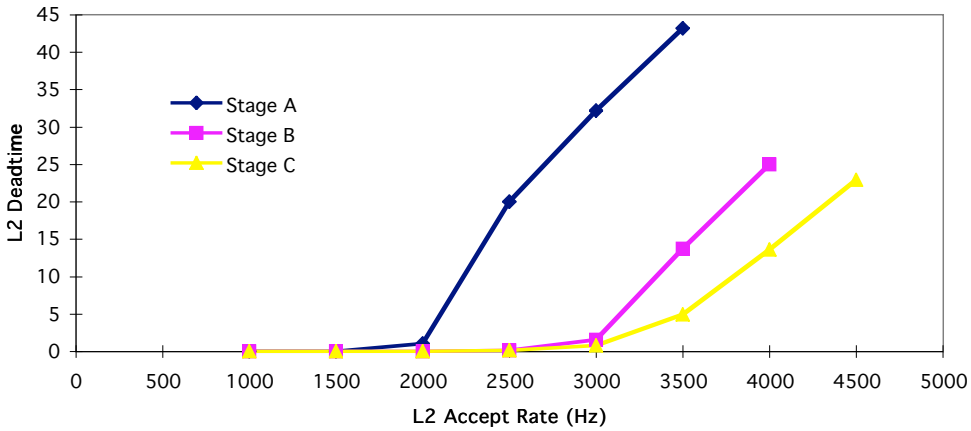
# The New and the Old

Deadtime Appears (kHz):

| Stage | Old List | New List |
|---|---|---|
| A | 1.5 | 1.7 |
| B | 2.0 | 2.5 |
| C | 2.5 | 2.8 |
| D | 3.5 | N/A |

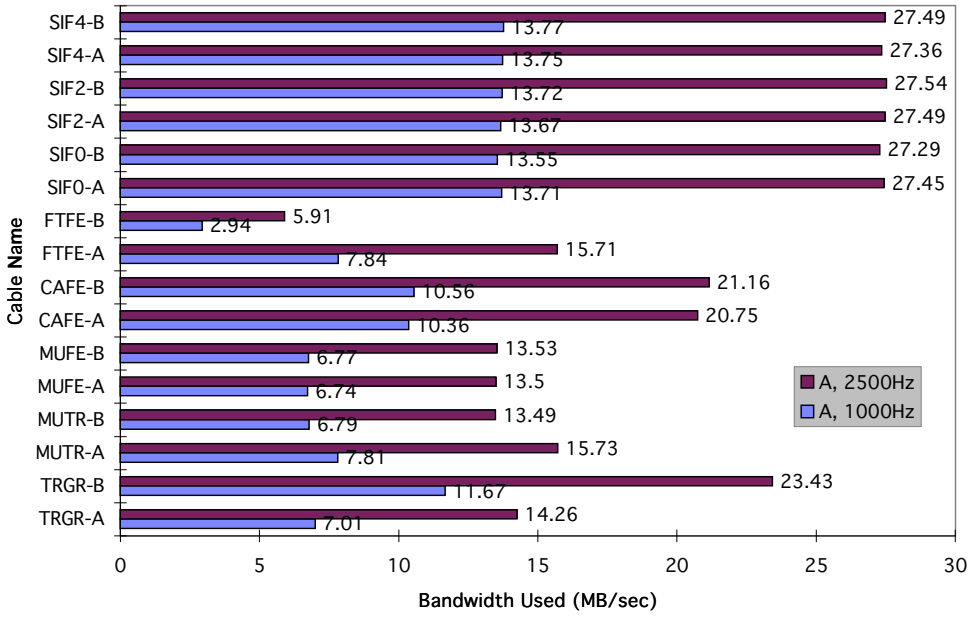
- N/A because I didn't design a crate list with Stage D's 12 collectors.

All three stages for the new crate list:



# MCH Data Cable Usage

- Individual cable usage
- Stage A
- 1000 Hz and 2500 Hz L2 accept rate.
- 48 MB/sec is the limit.




- How we load the cables also depends upon geographic location of FECs.

# Recent Additions

This is all preliminary

- Better simulation of CAL crates
  - Wait till L2 Accept to start digitization
  - Slow VME backplane speed (14 MB/sec)

  Could easily become the limiting factor
- Clusters of crates
  - Muon crates fluctuate in unison
  - Widths of up to 40% the average

  Only small effects seen in deadtime.

# Plans

- I've started writing a update simulation DØNote.
- Want to study Marvin's proposed SVX/SFI crate layout better.
- Get a better handle on crates and event size.
- Simulation of path to host system.
- Better simulation of data flow in a L3 node
- Recirculation error simulation